

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (Currently Amended) A high pressure discharge lamp lighting device of supplying an AC lamp current to light up a high pressure discharge lamp, characterized by providing

a lamp current forming device of forming a lamp current to a waveform where a standard period current supplied at a predetermined standard period and a short period current of a period shorter than that described above are alternately replaced with each other on every 1 period, and

optionally setting a duty ratio before and after the polarity inversion for the standard frequency current and/or the short frequency current, and

the lamp current forming device has a current controller of setting the current value before and/or after the inversion of the polarity of the short period current to higher than the current value of the standard signal current.

3. (Currently Amended) A high pressure discharge lamp lighting device according to claim ~~1~~ 2, wherein the lamp current forming device has a waveform setter of gradually increasing or gradually decreasing the current value before and/or after the polarity inversion of the short period current into a ramp wave.
4. (Cancelled)
5. (Currently Amended)) A high pressure discharge lamp lighting device according to claim 2 ~~4~~, wherein the current value of the short period current is set by the current controller to 1.2 times or more and 5 times or less the current value of the standard period current.
6. (Currently Amended)) A high pressure discharge lamp lighting device according to claim 2 ~~4~~, wherein the lamp current forming device has a period setter of setting the standard period for the standard period current to 1/500 sec or more and 1/60 sec or less and the period for the short period current to 1/30 times or more and 1/4 times or less the standard period.
7. (Cancelled)

8. (Original) A method of lighting up a high pressure discharge lamp of supplying an AC lamp current to light up a high pressure discharge lamp, characterized by

forming the lamp current with a current waveform where a standard period current at a predetermined standard period and a short period current of a period shorter than that described above are alternately replaced with each other on every 1 period, and supplying while controlling a duty ratio before and after the polarity inversion of the standard period current and/or the short period current to a duty ratio being set in accordance with the high pressure lighting light, and

setting the current value before and/or after the inversion of the polarity of the short period current to be higher than the current value of the standard signal current.